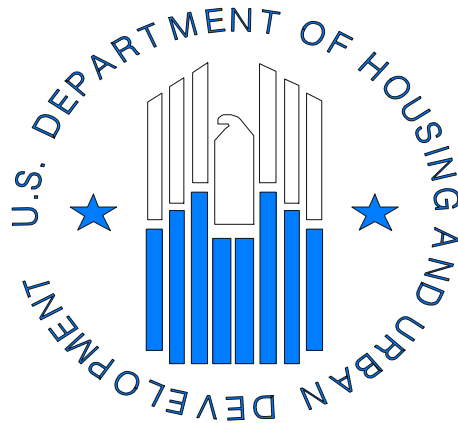


***US Department of Housing and Urban Development
Single Family Housing***



Developers Guide

For

Total Scorecard

FINAL – Confidential

| | |
|----------------|------------------|
| System: | CHUMS |
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Introduction

Purpose of TOTAL Scorecard Developer's Guide

The TOTAL Scorecard Developer's Guide provides the necessary information to establish an interface between the FHA's TOTAL Scorecard and an Automated Underwriting System(AUS). This document is primarily aimed at the software development and maintenance staff supporting an AUS. The document contains the following sections:

- Section 1 - Introduction to TOTAL Scorecard includes an overview of TOTAL Scorecard.
- Section 2 - Getting Started describes communication protocols, tips on building your TOTAL Scorecard interface, and security requirements.
- Section 3 - Interface File Descriptions details XML file formats and error handling.
- Appendices – including the Scorecard Data Elements, Error Codes and the DTD.

Overview of TOTAL Scorecard

TOTAL Scorecard is a transaction-based system. The steps below describe the processing of loan information from the lender's AUS, to the TOTAL Scorecard, and back to the lender. These steps must be performed for each transaction processed through the TOTAL Scorecard.

1. ***Loan information is entered into the lender's AUS.***
2. ***The lender requests an underwriting decision from the AUS.***
3. ***The AUS pulls the borrower's credit and applies eligibility rules.***
4. ***The AUS calls the TOTAL Scorecard***
5. ***The AUS examines the TOTAL Scorecard results along with other criteria to provide an underwriting decision.***

NOTES:

Getting Started

This section is designed to assist AUS developers (management and staff) in planning the organization's interface to the TOTAL Scorecard.

The following topics are outlined in this section:

- **Things to Consider** - There are decisions that the AUS developer must take into consideration when developing the TOTAL Scorecard interface.
- **Building the TOTAL Scorecard Interface** - There are steps that the AUS developer must follow with regard to implementation of these requirements, whether it be for initial or subsequent use. Most steps are likely to already be part of your system development process.
- **Security Requirements and Recommendations** - There are general rules and requirements that apply to the AUS developer when interfacing with the TOTAL Scorecard which directly impact system and data-related security.

Things to Consider

This section provides some key points for your consideration in the planning and development of the TOTAL Scorecard interface.

Interface Data File Formats

The TOTAL Scorecard uses Extensible Markup Language (XML). XML uses tags that define the data elements. The TOTAL Scorecard DTD is included in Appendix C in this document. The TOTAL Scorecard uses an SSL secured Hypertext Transfer Protocol (HTTPS) Uniform Resource Locator (URL). For further information regarding interface file descriptions, refer to section 3 of this manual.

Communications Protocol

The communications protocol for TOTAL Scorecard is TCP/IP via the Internet. The call to the TOTAL Scorecard will be via an HTTPS POST.

Data Mapping

The first aspect in developing of the TOTAL Scorecard interface is reviewing the data and formats required by the TOTAL Scorecard. The AUS developer must map each of the TOTAL Scorecard XML data elements to the corresponding data element(s) in the AUS. A field-by-field matrix is the suggested method for accomplishing this data mapping.

Through the data mapping process you are able to identify:

- **Data elements that are currently available within your system** - This set of data elements should not require a significant effort in the process of developing the interface.
- **Data elements that are available but values must be re-mapped or calculated** - These data elements require re-mapping of the values within your system to the values that TOTAL Scorecard requires.
- **Data elements that are unavailable in your system** - The AUS must be modified to capture these additional data elements, utilizing new or existing screens.

Security Requirements and Recommendations

TOTAL Scorecard's security requirements and recommendations adhere to the standards that have been established by the Automated Data Processing Security Office at HUD. All TOTAL Scorecard transactions are required to have the following:

- **User ID** – up to ten alphanumeric characters; and

- **Password** – up to ten alphanumeric characters.

User IDs and passwords are sent as part of the transaction. User IDs will be issued to partners as they are ready to begin developing their calls to the TOTAL Scorecard.

Interface File Descriptions

The AUS interfacing with the TOTAL Scorecard must be able to build TOTAL Scorecard standard XML data for a given Scorecard request. A new TOTAL Scorecard XML Data Stream must be generated for each new request made by the user. This section details the format of both the XML Data Stream and Response File.

XML Data Stream Format

The TOTAL Scorecard XML Data Stream uses an SSL secured Hypertext Transfer Protocol (HTTPS) uniform resource locator (URL).

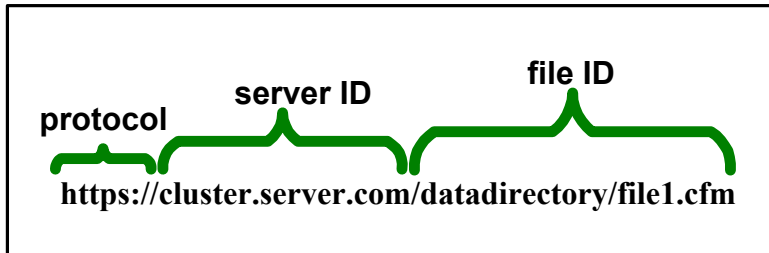


Figure 3.1 - Sections of a URL.

The client sends the XML data stream to the server via a generated post. The XML data stream is comprised of the value of the XML file. The data stream should NOT be urlencoded. In urlencoding, most characters are represented as 3 character strings. The TOTAL Scorecard is expecting that the data be sent as regular ASCII text. Not as urlencoded ASCII text.

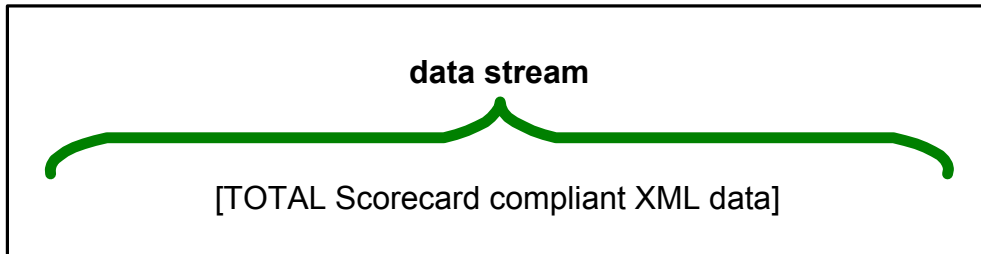


Figure 3.2 - Sample data stream.

Telecommunications Errors

Since the TOTAL Scorecard is using the HTTPS communications protocol, the exact format of telecommunications errors received follows the standard TCP/IP telecommunications errors.

Response File Format

The TOTAL Scorecard Response File uses Extensible Markup Language (XML) to identify each data element in the file.

NOTES:

APPENDIX A – Scorecard Data Elements

Appendix A – Scorecard Data Elements

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|--|--|-------------|------|-----------|-----------------------|-----------------------------------|---------------------------------|--|-------------------|
| 1 | Applicant(s) combined monthly income | The sum, in whole dollars, of the applicant(s) Base Employment Income, Overtime, Bonuses, Commissions, Dividends/Interest, Net Rental Income, and Other from Section 5 in 1003. This includes all applicants (even if 4+). | 999999 | 6 | Scorecard | I | Scoring | 1003 (Section 5) | Must be > 0 | monthly_income |
| 2 | Appraised value, if available | "As is" or "As Repaired" from URAR (Uniform Residential Appraisal Report) in whole dollars. | 999999 | 6 | Scorecard | I | Scoring | URAR | If entered, must be > 9000 and must be < 600,000 | appraised_value |
| 3 | Assets after closing (must allow for negative amounts) | Assets available (post-closing) in whole dollars not including gifts. | 999999 | 6 | Scorecard | I | Scoring | HUD Form 92900-WS (Line 10p) | Any value is ok | assets_after_clsg |
| 4 | FHA case number | FHA case number from FHA Connection | 999-9999999 | 11 | Scorecard | I | Scoring | FHA Connection | If entered, must pass check digit routine. | fha_case_number |
| 5 | Loan amount including MIP | Sum of loan amount and MIP in whole dollars from Section 7 in 1003. | 999999 | 6 | Scorecard | I | Scoring | 1003 (Section 7) | Must be > 0 | loan_amount |
| 6 | Monthly payment, including Principal, Interest, Taxes, and Insurance | Monthly payment, including Principal, Interest, Taxes, and Insurance in dollars and cents. Interest Rate should be based on Underwriting Interest Rate. | 9999.99 | 7 | Scorecard | I | Scoring | 1003 (Section 5) | Must be > 0 | piti |
| 7 | Mortgage Insurance Premium | Loan amount multiplied by the appropriate MIP Factor in whole dollars from Section 7 of 1003. | 99999.99 | 8 | Scorecard | I | Scoring | 1003 (Section 7) | Any non-negative value is ok | mip |
| 8 | Mortgage term in months (e.g., 180 months, 360 months) | Number of Months stated in Section 1 of 1003. | 999 | 3 | Scorecard | I | Scoring | 1003 (Section 1) | Must be > 47 and must be < 361 | term |
| 9 | Sales price | Purchase Price stated in Section 7 in whole dollars of 1003. | 999999 | 6 | Scorecard | I | Scoring | 1003 (Section 7) | If entered, must be > 9000 and must be < 600,000 | sale_price |
| 10 | Social Security Number for SSN1 | Social Security Number stated in Section 3 of 1003 for SSN1. | 999999999 | 9 | Scorecard | I | Scoring | 1003 (Section 3) | Must be a valid ssn | ssn |
| 11 | Social Security Number for SSN2 | Social Security Number stated in Section 3 of 1003 for SSN2. | 999999999 | 9 | Scorecard | I | Scoring | 1003 (Section 3) | If entered, must be a valid ssn | ssn |
| 12 | Social Security Number for SSN3 | Social Security Number stated in Section 3 of 1003 for SSN3. | 999999999 | 9 | Scorecard | I | Scoring | 1003 (Section 3) | If entered, must be a valid ssn | ssn |
| 13 | Social Security Number for SSN4 | Social Security Number stated in Section 3 of 1003 for SSN4. | 999999999 | 9 | Scorecard | I | Scoring | 1003 (Section 3) | If entered, must be a valid ssn | ssn |
| 14 | Social Security Number for SSN5 | Social Security Number stated in Section 3 of 1003 for SSN5. | 999999999 | 9 | Scorecard | I | Scoring | 1003 (Section 3) | If entered, must be a valid ssn | ssn |
| 15 | Total number of applicants | Total number of applicants stated in Section 3 of 1003. Total number of applicants must equal total SSN's/FICO entered. | 9 | 1 | Scorecard | I | Scoring | 1003 (Section 3) | Must be > 0 and must be < 6 | applicants |
| 16 | Unique identification for loan application assigned by AUS | Identification number assigned by the AUS scoring the loan. | char(16) | 16 | Scorecard | I | Scoring | AUS Vendor | Must be a valid identifier | loan_number |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|----------------------------|---|-------------------|------|------------|-----------------------|-----------------------------------|------------------------------|---|-----------------------|
| 17 | Loan-To-Value Ratio | Loan amount without MIP divided by the lesser of the appraised value or sales price of the property. | 999.99 | 6 | Scorecard | I | Scoring | HUD Form 92900-WS (Line 14a) | Must be > 10 and must be < 126 | ltv |
| 18 | Front-End Ratio | The projected monthly principal, interest, taxes, and insurance payment divided by the gross monthly income of all borrowers. | 999.99999 | 9 | Scorecard | I | Scoring | HUD Form 92900-WS (Line 14b) | Must be > 0 and must be < 101 | front_end_ratio |
| 19 | Back-End Ratio | Housing plus other debt divided by monthly income | 999.99999 | 9 | Scorecard | I | Scoring | HUD Form 92900-WS (Line 14c) | Must be > 0 and must be < 101 | back_end_ratio |
| 20 | Loan Indicator | Defines type of loan. "A" for ARM "B" for Buydown or space for all other loans. | "A", "B" or Space | 1 | Scorecard | I | Scoring | 1003 (Section 1) | Must be "A" for ARM, "B" for Buydown or a Space | amort_type |
| 21 | Underwriting P&I | P&I Amount at which loan is underwritten (Adjusted for ARMs whose LTV is 95% or greater and Buydowns; same as Contract P&I for all other loans) P&I to be used for underwriting purposes. Should be adjusted for ARMs whose LTV is 95% or greater to coincide with Underwriting Interest Rate adjustment. Should be adjusted for Buydowns to coincide with Buydown Interest Rate. Should match Contract P&I for all other loans. | 9999.99 | 7 | Scorecard | I | Scoring | See HUD Handbook 4155 | Must be > 0 | underwriting_pi |
| 22 | Contract P&I | Actual P&I payment (CHUMS P&I) | 9999.99 | 7 | Additional | I | CHUMS | 1003 (Section 5) | Must be > 0 | contract_pi |
| 23 | Underwriting Interest Rate | Interest rate at which loan is underwritten (Adjusted for ARMs whose LTV is 95% or greater; and for Buydowns same as Contract Interest Rate for all other loans) Interest rate to be used for underwriting purposes. Should be adjusted upward 1 point for ARMs whose LTV is 95% or greater. Should match the Buydown Interest Rate for Buydowns. Should match Contract Interest Rate for all other loans. | 99.999 | 6 | Scorecard | I | Scoring | See HUD Handbook 4155 | Must be > 0 | underwriting_interest |
| 24 | Contract Interest Rate | Stated interest rate on loan application (CHUMS Interest Rate) | 99.999 | 6 | Additional | I | CHUMS | 1003 (Section 1) | Must be > 0 | contract_interest |
| 25 | Borrower Age for SSN1 | Borrower Age stated in Section 3 of 1003 for SSN1. | 99 | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_age |
| 26 | Borrower Age for SSN2 | Borrower Age stated in Section 3 of 1003 for SSN2. | 99 | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_age |
| 27 | Borrower Age for SSN3 | Borrower Age stated in Section 3 of 1003 for SSN3. | 99 | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_age |
| 28 | Borrower Age for SSN4 | Borrower Age stated in Section 3 of 1003 for SSN4. | 99 | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_age |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|--------------------------|---|-------------------------------|------|------------|-----------------------|-----------------------------------|----------------------|--------------------|---------------------|
| 29 | Borrower Age for SSN5 | Borrower Age stated in Section 3 of 1003 for SSN5. | 99 | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_age |
| 30 | Borrower Marital Status | Borrower Marital Status stated in Section 3 of 1003. 1-married, 2-separated, 3-unmarried | 9 | 1 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_marital_status |
| 31 | Borrower Name for SSN1 | Borrower Name for SSN1 stated in Section 3 of 1003. | Last Name, First Name M.I. | 22 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_name |
| 32 | Borrower Name for SSN2 | Borrower Name for SSN2 stated in Section 3 of 1003. | Last Name, First Name M.I. | 22 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_name |
| 33 | Borrower Name for SSN3 | Borrower Name for SSN3 stated in Section 3 of 1003. | Last Name, First Name M.I. | 22 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_name |
| 34 | Borrower Name for SSN4 | Borrower Name for SSN4 stated in Section 3 of 1003. | Last Name, First Name M.I. | 22 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_name |
| 35 | Borrower Name for SSN5 | Borrower Name for SSN5 stated in Section 3 of 1003. | Last Name, First Name M.I. | 22 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_name |
| 36 | Borrower Race for SSN1 | Borrower Race for SSN1 stated in Section 10 of 1003. 0-Not Applicable, 1-White, 2-Black or African American, 3-American Indian or Alaska Native, 4-Asian, 5-Native Hawaiian or Other Pacific Islande, 9-Not Disclosed. Note – This field may appear multiple times in a single Borrower Container | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 10) | Any value is ok | borr_race |
| 37 | Borrower Race for SSN2 | Borrower Race for SSN2 stated in Section 10 of 1003. 0-Not Applicable, 1-White, 2-Black or African American, 3-American Indian or Alaska Native, 4-Asian, 5-Native Hawaiian or Other Pacific Islande, 9-Not Disclosed. Note – This field may appear multiple times in a single Borrower Container | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 10) | Any value is ok | borr_race |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|--------------------------|--|---------|------|------------|-----------------------|-----------------------------------|----------------------|--------------------|------------------|
| 38 | Borrower Race for SSN3 | Borrower Race for SSN3 stated in Section 10 of 1003. 0–Not Applicable, 1–White, 2–Black or African American, 3–American Indian or Alaska Native, 4–Asian, 5–Native Hawaiian or Other Pacific Islander, 9–Not Disclosed. Note – This field may appear multiple times in a single Borrower Container | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 10) | Any value is ok | borr_race |
| 39 | Borrower Race for SSN4 | Borrower Race for SSN4 stated in Section 10 of 1003. 0–Not Applicable, 1–White, 2–Black or African American, 3–American Indian or Alaska Native, 4–Asian, 5–Native Hawaiian or Other Pacific Islander, 9–Not Disclosed. Note – This field may appear multiple times in a single Borrower Container | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 10) | Any value is ok | borr_race |
| 40 | Borrower Race for SSN5 | Borrower Race for SSN5 stated in Section 10 of 1003. 0–Not Applicable, 1–White, 2–Black or African American, 3–American Indian or Alaska Native, 4–Asian, 5–Native Hawaiian or Other Pacific Islander, 9–Not Disclosed. Note – This field may appear multiple times in a single Borrower Container | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 10) | Any value is ok | borr_race |
| 41 | Borrower Sex for SSN1 | Borrower Sex for SSN1 stated in Section 3 of 1003. 1–Male, 2–Female | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_sex |
| 42 | Borrower Sex for SSN2 | Borrower Sex for SSN2 stated in Section 3 of 1003. 1–Male, 2–Female | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_sex |
| 43 | Borrower Sex for SSN3 | Borrower Sex for SSN3 stated in Section 3 of 1003. 1–Male, 2–Female | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_sex |
| 44 | Borrower Sex for SSN4 | Borrower Sex for SSN4 stated in Section 3 of 1003. 1–Male, 2–Female | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_sex |
| 45 | Borrower Sex for SSN5 | Borrower Sex for SSN5 stated in Section 3 of 1003. 1–Male, 2–Female | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | borr_sex |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|------------------------------|---|------------|------|------------|-----------------------|-----------------------------------|------------------------|--------------------|------------------|
| 46 | Borrower Ethnicity for SSN1 | Borrower Ethnicity for SSN1. Is borrower Hispanic or Latino? If borrower is Hispanic or Latino, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_ethnicity |
| 47 | Borrower Ethnicity for SSN2 | Borrower Ethnicity for SSN2. Is borrower Hispanic or Latino? If borrower is Hispanic or Latino, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_ethnicity |
| 48 | Borrower Ethnicity for SSN3 | Borrower Ethnicity for SSN3. Is borrower Hispanic or Latino? If borrower is Hispanic or Latino, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_ethnicity |
| 49 | Borrower Ethnicity for SSN4 | Borrower Ethnicity for SSN4. Is borrower Hispanic or Latino? If borrower is Hispanic or Latino, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_ethnicity |
| 50 | Borrower Ethnicity for SSN5 | Borrower Ethnicity for SSN5. Is borrower Hispanic or Latino? If borrower is Hispanic or Latino, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_ethnicity |
| 51 | Borrower Birth Date for SSN1 | Borrower Birth Date for SSN1 | Yyyymmdd | 8 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_birth_date |
| 52 | Borrower Birth Date for SSN2 | Borrower Birth Date for SSN2 | Yyyymmdd | 8 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_birth_date |
| 53 | Borrower Birth Date for SSN3 | Borrower Birth Date for SSN3 | Yyyymmdd | 8 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_birth_date |
| 54 | Borrower Birth Date for SSN4 | Borrower Birth Date for SSN4 | Yyyymmdd | 8 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_birth_date |
| 55 | Borrower Birth Date for SSN5 | Borrower Birth Date for SSN5 | Yyyymmdd | 8 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | borr_birth_date |
| 56 | First time home buyer (FTHB) | Has borrower had an ownership interest in a property in the last three years? If you have, FTHB = "N". If you have not, FTHB = "Y". If any borrower is a FTHB, the answer is "Y." | char(1) | 1 | Additional | I | CHUMS | 1003 (Section 8) | Any value is ok | first_time_buyer |
| 57 | Loan purpose | 1-Purchase an existing house, previously occupied 2-Finance improvements to an existing property 3-Refinance Refinance permanently sited manufactured home to buy lot. Refinance permanently sited manufactured home/lot loan 4-Purchase a new condo unit 5-Purchase an existing condo unit 6-Purchase existing home, not previously occupied Purchase permanently sited manufactured home and lot 7-Construct home – proceeds to be paid out during construction 8-HUD only - finance co-op purchase | char(2) | 2 | Additional | I | CHUMS | 1003 (Section 2) | Any value is ok | loan_purpose |
| 58 | Property address | Property street address stated in Section 2 of 1003. | Char(60) | 60 | Additional | I | CHUMS | 1003 (Section 2) | Any value is ok | prop_address |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|--|---|-----------------|------|------------|-----------------------|-----------------------------------|---|--------------------|------------------|
| 59 | Property city | Property city name stated in Section 2 of 1003. | Char(17) | 17 | Additional | I | CHUMS | 1002 (Section 2) | Any value is ok | prop_city |
| 60 | Property state | Property state abbreviation stated in Section 2 of 1003 | Char(2) | 2 | Additional | I | CHUMS | 1002 (Section 2) | Any value is ok | prop_state |
| 61 | Property zip code | Property zip code stated in Section 2 of 1003 | Char(9) | 9 | Additional | I | CHUMS | 1002 (Section 2) | Any value is ok | prop_zip |
| 62 | Property county code | Property fips county code. | Numeric(3) | 3 | Additional | I | CHUMS | 1002 (Section 2) | Any value is ok | prop_county |
| 63 | Self employed indicator for borrower | Is borrower self-employed? If one borrower is self-employed, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | 1003 (Section 4) | Any value is ok | self_employ |
| 64 | Veteran indicator for borrower | Is borrower a Veteran? If one borrower is a Veteran, the answer is "Y." | "Y" or "N" | 1 | Additional | I | CHUMS | 1003 (Section 1) | Any value is ok | veteran |
| 65 | Borrower's Closing Costs | Buyers total closing costs subtracted by the amount of buyer's closing costs paid by the seller | 999999 | 6 | Additional | I | CHUMS | HUD Form 92900-WS (Line 5c) | Any value is ok | borr_clsg_costs |
| 66 | Borrower Type | 1-Occupant 2-Landlord 3-Reserved 4-Reserved 5-Escrow Commitment 6-Reserved 7-Corporation (Refinance Only) 8-Government Agency or Non-Profit Organization | 1-digit numeric | 1 | Additional | I | CHUMS | 1003 (Section 2) | Any value is ok | borr_type |
| 67 | Current Total Monthly Expenses for all borrowers | Current monthly housing expenses in dollars and cents for all borrowers | 9999.99 | 7 | Additional | I | CHUMS | 1003 (Section 5) | Any value is ok | monthly_expense |
| 68 | Energy Efficient Mortgage Indicator | Is there an energy efficient mortgage indicator? | "Y" or "N" | 1 | Additional | I | CHUMS | See HUD Handbook 4155 Chapter 2-39 | Any value is ok | eem |
| 69 | First Payment Date | Month and Year of first payment | YYYYMM | 8 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | first_pay_date |
| 70 | Gift letter amount | Amount of Gift in whole dollars | 999999 | 6 | Additional | I | CHUMS | 1003 (Section 7) | Any value is ok | gift_amt |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|-------------------------------------|--|-----------------|------|------------|-----------------------|-----------------------------------|------------------------------------|--------------------|------------------|
| 71 | Gift letter source | Source of Gift 00 - N/A 01 - Relative 02 - Nonprofit/Religious/Community 03 - Government Assistance 06 - Employer | 99 | 2 | Additional | I | CHUMS | 1003 (Section 7) | Any value is ok | gift_source |
| 72 | Number of Dependents for borrowers | Total number of dependents for borrowers | 99 | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | dependents |
| 73 | Required Investment | Borrower's share of closing costs and down-payment in whole dollars | 999999 | 6 | Additional | I | CHUMS | 1003 (Section 7) | Any value is ok | req_invest |
| 74 | Solar energy indicator | Is there a solar energy indicator? | "Y" or "N" | 1 | Additional | I | CHUMS | See HUD Handbook 4155 Chapter 1-11 | Any value is ok | solar |
| 75 | Total cash requirements | Total combined cash available to close loan in whole dollars | 999999 | 6 | Additional | I | CHUMS | 1003 (Section 7) | Any value is ok | total_req |
| 76 | Years at Current Job for SSN1 | Years at current job for SSN1 | 2-digit numeric | 2 | Additional | I | CHUMS | 1003 (Section 4) | Any value is ok | years_at_job |
| 77 | Years Renting for borrower | Greatest number of years renting for any borrower | 2-digit numeric | 2 | Additional | I | CHUMS | 1003 (Section 3) | Any value is ok | years_renting |
| 78 | Total Closing Costs | Total closing costs of the transaction | 999999 | 6 | Additional | I | CHUMS | HUD Form 92900-WS (Line 5a) | Any value is ok | clsg_costs |
| 79 | Unpaid Principle Balance (for refs) | Amount of principal due on first loan | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | unpaid_balance |
| 80 | Mortgage Basis | Total cost to the buyer, including the buyer's share of any repairs, alterations, and additions to the property and the closing costs, contract price, and existing debt being refinanced, but excluding prepaids. | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | mortgage_basis |
| 81 | Assets Available | Total assets available for closing, including cash, savings bonds, and securities. | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | assets_avail |
| 82 | Total Fixed Payment | Sum of the total housing expense and other recurring charges, including all monthly payment debts and housing debts. | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | total_fixed |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|----------------------------|---|---------------------------|-----------|------------|-----------------------|-----------------------------------|------------------------|--|-------------------------|
| 83 | Counsel Type | Indicates if First Time Homebuyer (FTHB) completed homebuyer counseling. " " - N/A, "A" - Not Counseled, "B" - Lender, "C" - Third Party | "A", "B", "C", or " " | 1 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | counsel_type |
| 84 | Closing Date | Date loan was settled or closed. | Yymmdd | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | closing_date |
| 85 | Maturity Date | Date of last mortgage payment. | Yyyymm | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | maturity_date |
| 86 | Buydown Interest Rate | Interest rate paid by borrower as a result of points paid up front. To be used for underwriting purposes. | 99.999 | 6 | Additional | I | CHUMS | 1003 (Section 1) | Must be > 0 | buydown_interest |
| 87 | Secondary Financing Amount | Amount of financing provided from a source other than the originating lender that creates a lien against a property (even if the debt may be forgiven by the provider of the funds). | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | secondary_financing_amt |
| 88 | Secondary Financing Source | Type of entity providing secondary financing 00 - N/A 01 - Government & Nonprofit Instrumentality of Government 02 - Nonprofit (not Instrumentality of Government) 03 - Private Organizations/Eligible Individuals | 99 | 2 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | secondary_financing_src |
| 89 | EEM Escrow Amount | Amount held in escrow for energy efficient improvements. | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | eem_escrow_amt |
| 90 | Seller Concessions | Amount of the closing costs and financing concessions paid by the seller on behalf of the borrower. | 999999 | 6 | Additional | I | CHUMS | CHUMS Insurance Screen | Any value is ok | seller_concessions |
| 91 | Credit Report Type | Designates format of the Credit Report Data | Char(10) | 10 | Scorecard | I | Scoring | Credit Report | Must be a supported Credit Report Type. Please contact Single Family Housing for a current list of supported Credit Report Types | creditreporttype |
| 92 | Credit Report Data | Raw Credit Report | Unlimited Alphanumeric | Unlimited | Scorecard | I | Scoring | Credit Report | Any value is ok | creditreportdata |
| 93 | Lender ID | Code to Identify the originator making the underwriting request. Should be the FHA 10 digit lender ID | Char(10) | 20 | Scorecard | I | Scoring | FHA | Must be a valid FHA 10 digit lender ID | lender_id |
| 94 | Sponsor ID | Code to Identify the lender acting as an approved sponsor for the originator making the underwriting request. Should be the FHA 10 digit lender ID. Required if the Lender ID is a Loan Correspondent. Optional if the Lender ID is for a DE Approved originator. | Char(10) | 20 | Scorecard | I | Scoring | FHA | If entered, must be a valid FHA 10 digit lender ID | sponsor_id |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|---------------------------------|---|---|------------------|------|-----------|-----------------------|-----------------------------------|---|--------------------|------------------|
| 95 | Version | The version of the TOTAL Scorecard used during the initial underwriting decision of the loan application. This should match the version output from the TOTAL Scorecard during the initial submission of the loan application to the TOTAL Scorecard. Should be blank for the initial submission of a loan application. | Char(11) | 11 | Scorecard | I | Scoring | Version output from the initial submission of the loan to the TOTAL Scorecard | Any value is ok | version |
| Output Variables Follow: | | | | | | | | | | |
| 1 | Number of review rules/credit overrides that were triggered | The number of review rules/credit overrides that were triggered (0-5). | 99 | 2 | Scorecard | O | Scoring | N/A | N/A | NumReviews |
| 2 | Error Code | Error codes derived during the validation process; error codes are returned comma delimited (Example: 166, 300, 325) | Char(50) | 50 | Scorecard | O | Scoring | N/A | N/A | Errcde |
| 3 | Array containing the ID of the review rules triggered | Comma delimited field with codes indicating which review rules were triggered. 01-Front-End Ratio 02-Back-End Ratio 04-Foreclosure 05-Bankruptcy 06-Late Mortgage Payments | 99,99 | 30 | Scorecard | O | Scoring | N/A | N/A | ReviewRules |
| 4 | Post-review rules Accept or Refer decision | Accept/Refer decision. Takes into account algorithm score, review rules and credit overrides. | "A," "R," or "U" | 1 | Scorecard | O | Scoring | N/A | N/A | PostReview |
| 5 | Pre-review rules Accept or Refer decision | Accept/Refer based only on algorithm score. | "A," "R," or "U" | 1 | Scorecard | O | Scoring | N/A | N/A | PreReview |
| 6 | Borrower1 FICO | FICO score for Borrower1 | 9999 | 4 | Scorecard | O | Scoring | Credit Report | N/A | LFico |
| 7 | Borrower2 FICO | FICO score for Borrower2 | 9999 | 4 | Scorecard | O | Scoring | credit Report | N/A | LFico |
| 8 | Borrower3 FICO | FICO score for Borrower3 | 9999 | 4 | Scorecard | O | Scoring | Credit Report | N/A | LFico |
| 9 | Borrower4 FICO | FICO score for Borrower4 | 9999 | 4 | Scorecard | O | Scoring | Credit Report | N/A | LFico |
| 10 | Borrower5 FICO | FICO score for Borrower5 | 9999 | 4 | Scorecard | O | Scoring | Credit Report | N/A | LFico |
| 11 | Social Security Number for Borrower1 | Social Security Number stated in Section 3 of 1003 for Borrower1. | 999999999 | 9 | Scorecard | O | Scoring | 1003 (Section 3) | N/A | ssn |
| 12 | Social Security Number for Borrower2 | Social Security Number stated in Section 3 of 1003 for Borrower2. | 999999999 | 9 | Scorecard | O | Scoring | 1003 (Section 3) | N/A | ssn |
| 13 | Social Security Number for Borrower3 | Social Security Number stated in Section 3 of 1003 for Borrower3. | 999999999 | 9 | Scorecard | O | Scoring | 1003 (Section 3) | N/A | ssn |
| 14 | Social Security Number for Borrower4 | Social Security Number stated in Section 3 of 1003 for Borrower4. | 999999999 | 9 | Scorecard | O | Scoring | 1003 (Section 3) | N/A | ssn |
| 15 | Social Security Number for Borrower5 | Social Security Number stated in Section 3 of 1003 for Borrower5. | 999999999 | 9 | Scorecard | O | Scoring | 1003 (Section 3) | N/A | ssn |
| 16 | Repository for selected FICO for Borrower1 | The Credit Repository which provided the FICO reported from the scorecard. | Char(20) | 20 | Scorecard | O | Scoring | Credit Report | N/A | repository |
| 17 | Repository for selected FICO for Borrower2 | The Credit Repository which provided the FICO reported from the scorecard. | Char(20) | 20 | Scorecard | O | Scoring | Credit Report | N/A | repository |
| 18 | Repository for selected FICO for Borrower3 | The Credit Repository which provided the FICO reported from the scorecard. | Char(20) | 20 | Scorecard | O | Scoring | Credit Report | N/A | repository |

| | Scorecard Table Elements | Definition | Format | Size | Data Type | Input or Output? * | Required for Scoring/ CHUMS | Source | Scoreable Criteria | DTD Element Name |
|----|--|--|----------|------|-----------|-----------------------|-----------------------------------|---------------|--------------------|------------------|
| 19 | Repository for selected FICO for Borrower4 | The Credit Repository which provided the FICO reported from the scorecard. | Char(20) | 20 | Scorecard | O | Scoring | Credit Report | N/A | repository |
| 20 | Repository for selected FICO for Borrower5 | The Credit Repository which provided the FICO reported from the scorecard. | Char(20) | 20 | Scorecard | O | Scoring | Credit Report | N/A | repository |
| 21 | Version | The Version of the TOTAL Scorecard used during this scorecard submission. | Char(11) | 11 | Scorecard | O | Scoring | N/A | N/A | Version |
| 22 | Unique identification for loan application assigned by AUS | Identification number assigned by the AUS scoring the loan. | char(16) | 16 | Scorecard | O | Scoring | AUS Vendor | N/A | loan_number |

APPENDIX B – Scorecard Error Codes

Appendix B - Scorecard Error Codes

| ERROR CODES | ERROR MESSAGES |
|-------------|---|
| 001 | Data in AUS system to calculate score is not complete |
| 004 | One SSN must be entered |
| 005 | SSN1 is not valid |
| 006 | SSN2 is not valid |
| 007 | SSN3 is not valid |
| 008 | SSN4 is not valid |
| 009 | SSN5 is not valid |
| 010 | SSN2 is required |
| 011 | SSN3 is required |
| 012 | SSN4 is required |
| 200 | FICO Score numbers for SSN2 must be 0 when SSN2 not entered |
| 210 | FICO Score numbers for SSN3 must be 0 when SSN3 not entered |
| 220 | FICO Score numbers for SSN4 must be 0 when SSN4 not entered |
| 230 | FICO Score numbers for SSN5 must be 0 when SSN5 not entered |
| 235 | A zero FICO Score is only permitted for one applicant |
| 240 | One FICO Score is required when only one applicant |
| 290 | Invalid FHA Case Number |
| 300 | Applicant(s) combined monthly income must be greater than 0 |
| 305 | Appraised Value must be between \$9,000 and \$600,000. Otherwise, it must be 0. |
| 310 | Loan amount including MIP must be greater than 0 |
| 315 | Monthly payment, including Principal, Interest, Taxes and Insurance, must be greater than 0 |
| 320 | Mortgage Insurance Premium cannot be less than 0 |
| 325 | Mortgage term in months must be between 48 and 360 |
| 330 | Sale price must be between \$9,000 and \$600,000 |
| 335 | Either Appraised Value or Sale Price is required |
| 340 | Total number of applicants must be between 1 and 5 |
| 345 | Total number of applicants does not match number of SSNs entered |
| 350 | Unique identification for AUS must be entered |
| 355 | Unique identification for loan application assigned by AUS must be entered |
| 360 | Loan-To-Value Ratio must be between 11 and 125 |
| 365 | Front End Ratio must be greater than 0 and less than 101 |
| 370 | Back End Ratio must be greater than 0 and less than 101 |
| 372 | Back End Ratio must be greater than Front End Ratio |
| 375 | Underwriting P&I must be greater than 0 |

| ERROR CODES | ERROR MESSAGES |
|-------------|---|
| 380 | Underwriting Interest must be greater than 0 |
| 385 | Lender ID is required |
| 390 | Lender ID must contain 10 digits |
| 391 | Invalid Lender ID |
| 392 | Lender ID is not active |
| 393 | Sponsor ID is required |
| 394 | Sponsor ID must contain 10 digits |
| 395 | Invalid Sponsor ID |
| 396 | Sponsor ID is not active |
| 397 | Both Lender ID and Sponsor ID cannot be mortgagee type 4 |
| 400 | Credit Report is required |
| 405 | Each Credit Report must include a Credit Report Type and a Credit Report Data |
| 999 | AUS system unable to score loan with data provided |

APPENDIX C –Scordcard DTDs

Input DTD

```

<?xml version='1.0' standalone='yes'?>
<!DOCTYPE document [
    <!ELEMENT borrower (ssn, borr_age?, borr_name?, borr_race*, borr_sex?, borr_ethnicity?,
    borr_birth_date?)>
    <!ELEMENT creditreport (creditreporttype, creditreportdata)>
    <!ELEMENT ssn (#PCDATA)>
    <!ELEMENT borr_age (#PCDATA)>
    <!ELEMENT borr_name (#PCDATA)>
    <!ELEMENT borr_race (#PCDATA)>
    <!ELEMENT borr_sex (#PCDATA)>
    <!ELEMENT borr_ethnicity (#PCDATA)>
    <!ELEMENT borr_birth_date (#PCDATA)>
    <!ELEMENT monthly_income (#PCDATA)>
    <!ELEMENT appraised_value (#PCDATA)>
    <!ELEMENT assets_after_clsg (#PCDATA)>
    <!ELEMENT fha_case_number (#PCDATA)>
    <!ELEMENT loan_amount (#PCDATA)>
    <!ELEMENT piti (#PCDATA)>
    <!ELEMENT mip (#PCDATA)>
    <!ELEMENT term (#PCDATA)>
    <!ELEMENT sale_price (#PCDATA)>
    <!ELEMENT applicants (#PCDATA)>
    <!ELEMENT loan_number (#PCDATA)>
    <!ELEMENT ltv (#PCDATA)>
    <!ELEMENT front_end_ratio (#PCDATA)>
    <!ELEMENT back_end_ratio (#PCDATA)>
    <!ELEMENT amort_type (#PCDATA)>
    <!ELEMENT underwriting_pi (#PCDATA)>
    <!ELEMENT contract_pi (#PCDATA)>
    <!ELEMENT underwriting_interest (#PCDATA)>
    <!ELEMENT contract_interest (#PCDATA)>
    <!ELEMENT borr_marital_status (#PCDATA)>
    <!ELEMENT first_time_buyer (#PCDATA)>
    <!ELEMENT loan_purpose (#PCDATA)>
    <!ELEMENT prop_address (#PCDATA)>
    <!ELEMENT prop_city (#PCDATA)>
    <!ELEMENT prop_state (#PCDATA)>
    <!ELEMENT prop_zip (#PCDATA)>
    <!ELEMENT prop_county (#PCDATA)>
    <!ELEMENT self_employ (#PCDATA)>
    <!ELEMENT veteran (#PCDATA)>
    <!ELEMENT borr_clsg_costs (#PCDATA)>
    <!ELEMENT borr_type (#PCDATA)>
    <!ELEMENT monthly_expense (#PCDATA)>
    <!ELEMENT eem (#PCDATA)>
    <!ELEMENT first_pay_date (#PCDATA)>
    <!ELEMENT gift_amt (#PCDATA)>
    <!ELEMENT gift_source (#PCDATA)>
    <!ELEMENT dependents (#PCDATA)>
    <!ELEMENT req_invest (#PCDATA)>
    <!ELEMENT solar (#PCDATA)>
    <!ELEMENT total_req (#PCDATA)>
    <!ELEMENT years_at_job (#PCDATA)>

```

```

    <ELEMENT years_renting (#PCDATA)>
    <ELEMENT clsg_costs (#PCDATA)>
    <ELEMENT unpaid_balance (#PCDATA)>
    <ELEMENT mortgage_basis (#PCDATA)>
    <ELEMENT assets_avail (#PCDATA)>
    <ELEMENT total_fixed (#PCDATA)>
    <ELEMENT counsel_type (#PCDATA)>
    <ELEMENT closing_date (#PCDATA)>
    <ELEMENT maturity_date (#PCDATA)>
    <ELEMENT buydown_interest (#PCDATA)>
    <ELEMENT secondary_financing_amt (#PCDATA)>
    <ELEMENT secondary_financing_src (#PCDATA)>
    <ELEMENT eem_escrow_amt (#PCDATA)>
    <ELEMENT seller_concessions (#PCDATA)>
    <ELEMENT creditreporttype (#PCDATA)>
    <ELEMENT creditreportdata (#PCDATA)>
    <ELEMENT version (#PCDATA)>
    <ELEMENT lender_id (#PCDATA)>
    <ELEMENT sponsor_id (#PCDATA)>
  ]>

```

Output DTD

```

<?xml version='1.0' standalone='yes'?>
<!DOCTYPE document [
  <ELEMENT Borrowers (Borrower*)>
  <ELEMENT Borrower (LFico, ssn, repository)>
  <ELEMENT LFico (#PCDATA)>
  <ELEMENT ssn (#PCDATA)>
  <ELEMENT repository (#PCDATA)>
  <ELEMENT NumReviews (#PCDATA)>
  <ELEMENT Errcde (#PCDATA)>
  <ELEMENT ReviewRules (#PCDATA)>
  <ELEMENT PostReview (#PCDATA)>
  <ELEMENT PreReview (#PCDATA)>
  <ELEMENT Version (#PCDATA)>
  <ELEMENT loan_number (#PCDATA)>
]

```


APPENDIX D –Revisions

Revisions

October 22, 2003

Changes to be in compliance with HMDA requirements:

Added the following fields:

| <u>Name</u> | <u>Appendix A - position</u> |
|------------------------------|------------------------------|
| Borrower Ethnicity for SSN1 | 46 |
| Borrower Ethnicity for SSN2 | 47 |
| Borrower Ethnicity for SSN3 | 48 |
| Borrower Ethnicity for SSN4 | 49 |
| Borrower Ethnicity for SSN5 | 50 |
| Borrower Birth Date for SSN1 | 51 |
| Borrower Birth Date for SSN2 | 52 |
| Borrower Birth Date for SSN3 | 53 |
| Borrower Birth Date for SSN4 | 54 |
| Borrower Birth Date for SSN5 | 55 |
| Secondary Financing Amount | 87 |
| Secondary Financing Source | 88 |
| EEM Escrow Amount | 89 |
| Seller Concessions | 90 |

Modified the following fields:

| | |
|--------------------|---------------|
| Gift Letter Source | 70 |
| Borr X Race | 36 through 40 |

Modification to DTD Only

Modified Race to allow multiple occurrences

Changes to pull FICO scores from the credit report:

Removed the following fields:

| <u>Name</u> | <u>Appendix A - old position</u> |
|-------------------------|----------------------------------|
| Beacon Score for SSN1 | 5 |
| Beacon Score for SSN2 | 6 |
| Beacon Score for SSN3 | 7 |
| Beacon Score for SSN4 | 8 |
| Beacon Score for SSN5 | 9 |
| FICO Score for SSN1 | 10 |
| FICO Score for SSN2 | 11 |
| FICO Score for SSN3 | 12 |
| FICO Score for SSN4 | 13 |
| FICO Score for SSN5 | 14 |
| Empirica Score for SSN1 | 15 |
| Empirica Score for SSN2 | 16 |
| Empirica Score for SSN3 | 17 |
| Empirica Score for SSN4 | 18 |
| Empirica Score for SSN5 | 19 |